



# SLOVENSKI STANDARD

## SIST EN 792-12:2000

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### Hand-held non-electric power tools - Safety requirements - Part 12: Small circular, small oscillating and reciprocating saws

Hand-held non-electric power tools - Safety requirements - Part 12: Small circular, small oscillating and reciprocating saws

Handgehaltene nicht-elektrisch betriebene Maschinen - Sicherheitsanforderungen - Teil 12: Kleine Kreis-, oszillierende und Sticksägemaschinen

Machines portatives a moteur non électrique - Prescriptions de sécurité - Partie 12: Petites scies circulaires et petites scies oscillantes et alternatives

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 792-12

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English version

## Hand-held non-electric power tools - Safety requirements - Part 12: Small circular, small oscillating and reciprocating saws

Machines portatives à moteur non électrique - Prescriptions  
de sécurité - Partie 12: Petites scies circulaires et petites  
scies oscillantes et alternatives

Handgehaltene nicht-elektrisch betriebene Maschinen -  
Sicherheitsanforderungen - Teil 12: Kleine Kreis-,  
oszillierende und Sticksägemaschinen

This European Standard was approved by CEN on 26 May 2000.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 255 "Hand-held, non electric power tools - Safety ", the secretariat of which is held by SIS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2000 and conflicting national standards shall be withdrawn at the latest by December 2000.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The standard has been created in close co-operation with CENELEC/TC 61F with the aim of achieving requirements for mechanical safety in the EN 50 144 series, which are similar for hand-held electric and non-electric power tools.

The annexes to this part of the standard are:

Annex A (informative) Examples of power tools covered by this part

Annex B (informative) Labels, signs and tags

Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives.

This standard also contains a Bibliography.

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## 0 Introduction

This European standard is a type C standard as stated in EN 1070.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this standard.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of other standards, for machines that have been designed and built according to the provisions of this type C standard.

The European Standard, EN 792, consists of a number of independent parts for individual types of hand-held non-electric power tools.

Other EN standards deal with safety rules for hand-held power tools used in e. g. the following fields:

- agriculture and forestry such as chain saws, hedge-trimmers, brush cutters, grass trimmers
- construction and building such as cutting-off power tools, concrete vibrators
- food industry, such as fowl secateurs, sheep shears.

Endeavours have been made to achieve co-ordination with the relevant Technical Committees so that the safety requirements are compatible.

This standard is divided in the following parts:

- Part 1 - Assembly power tools for non-threaded mechanical fasteners ( former part 14)
- Part 2 - Cutting-off and crimping power tools (former part 15)
- Part 3 - Drills and tappers
- Part 4 - Non-rotary percussive power tools
- Part 5 - Rotary, percussive power drills
- Part 6 - Assembly power tools for threaded fasteners
- Part 7 - Grinders
- Part 8 - Sanders and polishers
- Part 9 - Die grinders
- Part 10 - Compression power tools
- Part 11 - Nibblers and shears
- Part 12 - Small circular, small oscillating and reciprocating saws
- Part 13 - Fastener driving tools

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Certain parts of EN 792 cover hand-held non-electric power tools, driven by internal combustion engines powered by gaseous or liquid fuel. In these parts, the safety aspects relating to internal combustion engines are found in a normative annex.

The parts are type C standards and refer to pertinent European Standards of type A and B where such standards are applicable.

## 1 Scope

The standard EN 792 applies to hand-held non-electric power tools driven by rotary or linear motors, powered by compressed air, hydraulic fluid and intended to be used by one operator and supported by:

- the operator's hand or hands
- a suspension, e. g. a balancer.

This part, EN 792-12, applies to hand-held non-electric small circular and small oscillating and reciprocating power tools for sawing. This part lists the significant hazards caused by such power tools and specifies safety requirements valid for different aspects of safety during their foreseeable lifetime and subsequent disposal.

Power tools covered by this part of the standard:

- circular saws, circular knives
- jig saws
- oscillating saws, oscillating knives (windshield knives)
- power hack saws
- reciprocating saws.

This part of the standard applies to:

- circular saws with saw blades with a diameter of 65 mm or less
- circular saws with diamond cutting-off wheels with diameters of 65 mm or less and a maximum cutting depth of 10 mm
- oscillating saws having a saw blade with a radius of 50 mm or less or a diamond cutting-off blade with a radius of 100 mm or less.

*NOTE 1: For circular saws having saw blades exceeding 65 mm see requirements for mechanical safety of EN 50144-2-5 and EN 50144-2-10. For circular saws with diamond cutting-off wheels exceeding 65 mm see part 7 of this series*

Special requirements and modifications on a hand-held power tool for the purpose of mounting it in a fixture are not covered by this part.

*NOTE 2: At the date of publication no power saws driven by internal combustion engines are known.*

## 2 Normative references

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This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of the publications referred to in this European Standard are valid only when they are incorporated in this standard by amendment or revision. For undated references the latest edition of the publication referred to, applies (including amendments).

EN 292-1:1991      Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology



EN 292-2:1991	Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications
EN 563	Safety of machinery - Temperatures of touchable surfaces - Ergonomics data to establish temperature limit values for hot surfaces
EN 614-1	Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles
EN 1070	Safety of machinery - Terminology
EN 12096	Mechanical vibration - Declaration and verification of vibration emission values
EN ISO 4871	Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)
prEN ISO 15744 :1999	Noise measurement code - hand held non-electric power tools – Engineering method (grade 2) (ISO/DIS 15744:1999)
EN 28662-1	Hand-held portable power tools - Measurement of vibrations at the handle - Part 1: General (ISO 8662-1:1988)
EN ISO 8662-12	Hand-held portable power tools - Measurement of vibrations at the handle - Part 12: Saws and files with reciprocating action and saws with oscillating or rotating action (ISO 8662-12:1997)
EN 50144-2-5	Safety of hand-held electric motor operated tools – Part 2-5 : Particular requirements for circular saws and circular knives
ISO 3857-3	Compressors, pneumatic tools and machines - Vocabulary Part 3: Pneumatic tools and machines.
ISO 5391	Pneumatic tools and machines - Vocabulary

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### 3 Terms and definitions

For the purposes of this part of the standard, the following terms and definitions apply:

[SIST EN 792-12:2000](https://standards.iteh.ai/catalog/standards/sist/2ee4725e-7b2f-46aa-80a8-2f7c9115c4c4/sist-en-792-12-2000)

#### 3.1 General terms and definitions

**3.1.1 hand-held power tool:** Machine driven by rotary or linear motors powered by compressed air, hydraulic fluid, gaseous or liquid fuel, electricity or stored energy (e.g. by a spring) to do mechanical work and so designed that the motor and the mechanism form an assembly that can easily be brought to its place of operation. The hand-held power tool is operated by one or two hands.

*NOTE: Hand-held power tools driven by compressed air or gas are called pneumatic tools. Hand-held power tools driven by hydraulic liquid are called hydraulic tools.*

**3.1.2 rotary power tool:** Power tool the output spindle of which rotates.



**3.1.3 inserted tool:** Tool inserted in the hand-held power tool to perform the intended work.

**3.1.4 service tool:** Tool intended for performing maintenance or service on the hand-held power tool.

**3.1.5 control device:** Device to start and stop the hand-held power tool or to change the direction of the rotation or to control the functional characteristics such as speed and power.

**3.1.6 maximum operating pressure:** Maximum pressure that a hand-held power tool may be operated at, as specified by the manufacturer.

## **3.2 Terms and definitions related to small circular, small oscillating and reciprocating saws**

**3.2.1 circular saw:** Rotary power tool equipped with a circular saw blade.

**3.2.2 oscillating saw:** Power tool equipped with a circular or segment saw blade which moves with an angular oscillating movement.

**3.2.3 reciprocating saw:** Power tool equipped with a straight saw blade which moves with a reciprocating movement. Examples are jig saw, power hack saw.

**3.2.4 riving knife:** Metal part placed in the plane of the saw blade which prevents the wood from tightening onto the rear part of the saw blade and thus prevents the backward movement of the tool or jamming of the saw blade.

**3.2.5 circular knife:** Rotary power tool equipped with a circular knife.

**3.2.6 oscillating knife:** Power tool equipped with a knife which moves with an angular oscillating movement.

**3.2.7 saw blade:** Blade of circular, segment or straight shape intended for cutting or cutting-off operations by chip removal by means of teeth with cutting edges

For other terms, see EN 1070 and also ISO 3857-3 and ISO 5391.

For examples of small circular, small oscillating and reciprocating saws see annex A.

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## 4 List of hazards

The following hazards can occur in the use of small circular, small oscillating and reciprocating saws.

Hazard type	Reference to safety requirement	
	By design or guarding	Information for use
<b>4.1 Mechanical hazards</b> - cutting - drawing in or trapping (caused by hair, clothing etc.getting entangled in a rotating power tool) - friction or abrasion hazard - whipping hose - ejection from high pressure hydraulic systems - ejection of parts - loss of stability - hose and hose coupling specifications	5.1.1, 5.1.6, 5.1.7  5.1.1  5.1.4 5.1.3 5.1.2	6.2.2  6.2.2 6.2.2 6.2.2
<b>4.2 Electrical hazards</b>		6.2.2
<b>4.3 Thermal hazards</b> - explosions - health damage due to hot or cold surfaces	5.2 5.2	
<b>4.4 Hazards caused by noise</b>	5.3	6.2.2
<b>4.5 Hazards generated by vibration</b>	5.4	6.2.2
<b>4.6 Hazards generated by materials and substances processed, used or exhausted</b> - inhalation of harmful dust - exhaust air - lubricants - hydraulic fluid	5.5.2 5.5.1 5.5.3	6.2.2
<b>4.7 Hazards caused by neglecting ergonomic principles</b> - repetitive strain injuries - unsuitable postures - inadequate grip design and tool balance - neglected use of personal protection equipment	5.6.1, 5.6.2  5.6.1	6.2.2 6.2.2
<b>4.8 Hazards caused by failure of energy supply</b> - unexpected return of energy supply after a breakdown - incorrect hydraulic fluid flow and outlet pressure		6.2.2 6.2.2
<b>4.9 Hazards caused by missing and/or incorrectly positioned safety related means</b> - start and stop device - unintentional start	5.7.1 5.7.2	6.2.2

## 5 Safety requirements and measures

### 5.1 Mechanical safety

#### 5.1.1 Surfaces, edges and corners

Accessible parts of small circular, small oscillating and reciprocating saws, except the inserted tool, shall not have sharp edges or angles or rough or abrasive surfaces, see 3.1 of EN 292-2:1991.

#### 5.1.2 Supporting surface and stability

Small circular, small oscillating and reciprocating saws shall be so designed that they can be laid aside and remain in stable position on a plane surface.

#### 5.1.3 Flanges

Flanges for small circular saws, for clamping the saw blade to the working spindle shall be of equal size and of a size not less than 0,3 times the rated diameter of the blade.

#### 5.1.4 High pressure ejection

Hydraulic systems of the power tools shall be enclosed so as to give protection against high pressure fluid ejection.

#### 5.1.5 Guide plate

Small circular saws and jig saws shall have a guide plate affixed to the saw of a size and shape to permit the intended operation of the saw.

Power hack saws shall have a guide plate to absorb the reaction force from the sawing process.

#### 5.1.6 Run-down time

Small circular saws shall have a run-down time after stop command has been given within 5 s.

#### 5.1.7 Guard

Small circular saws shall be provided with a guard above the guide plate to prevent unintentional contact of hands with the inserted saw blade. It shall not be possible to remove the guard without the aid of a service tool.

Small circular saws with a sawing depth of more than 10 mm shall be provided with a moveable (retractable) guard covering the part of the blade protruding below the guideplate. The moveable guard shall move freely without jamming. When released from its full open position, it shall return to the fully closed position in 0,3 s.

Reciprocating saws do not require a guard for the part of the saw blade which performs the sawing and is situated below the guide plate. The part of the saw blade which is situated above the guide plate shall be protected by guard or the design shall be so that the risk of contact with the teeth of the blade and with moving parts of the mechanism is prevented.

*NOTE: Oscillating saws do not require a guard.*